UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/622,115	07/18/2003	Michel John Arthur Groux	3712036-00486	1635

29157 7590 01/24/2011

K&L Gates LLP
P.O. Box 1135
CHICAGO, IL 60690

EXAMINER	
CHAWLA, JYOTI	
ART UNIT	PAPER NUMBER
1781	

NOTIFICATION DATE	DELIVERY MODE
01/24/2011	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

chicago.patents@klgates.com

UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/622,115
Filing Date: July 18, 2003
Appellant(s): GROUX ET AL.

Robert M. Barrett
For Appellant

This is in response to the appeal brief filed October 28, 2010 appealing from the Office action mailed May 14, 2010.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the Appeal brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the Appeal brief is correct. This appeal involves claims 1, 3-4, 9-12 and 15-17 which were rejected in the final office action dated 5/14/2010.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the Appeal brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the Appeal brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

A correct copy of appealed claims 1, 3-4, 9-12 and 15-17 appears on pages 20-21 of the appellant's brief.

(8) Evidence Relied Upon

US 4107343	Petricca	08-1978
US 3519440	Staackmannn et al.	7-1970
US 4888194	Anderson et al.	12-1989
Dictionary of Food Ingredients (Fourth Edition)	Igoe et al.	2001

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Appellants' statement 2. of Grounds of rejection requires correction as claim 14 was cancelled by the appellant in an amendment after final of 7/30/2010, so the rejection under 35 U.S.C. §103(a) as being unpatentable over Petricca in view of the combination

of Igoe, Staackmann, and further in view of U.S. Patent No. 4,888,194 to Anderson et al. ("Anderson"), applies to claims 12 and 16 only.

For clarity, the section number for objections and rejections below have been changed to correspond with the sections used by the appellant in the argument part of the appeal brief.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were

made absent any evidence to the contrary. Appellant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

(1) Claims 1, 3-4, 9-11, 15 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Petricca (US 4107343) in view of the combination of Dictionary of Food ingredients by Igoe et al, hereinafter, Dictionary of Food Ingredients, and Staackmann et al (US 3,519,440), hereinafter Staackmann.

Regarding claim 1, Petricca teaches a "whippable homogenized emulsion comprising water fat sweetener, dispersible protein, thickener, buffer and emulsifier" (Column 1, lines 30-34). Whippable product of Petricca comprises about 20-30% fat by weight (see Column 1, lines 41-43), which falls in the claimed range of 0 to 40% fat by weight. Regarding the limitation of 5% to 23% non-fat solids by weight, Petricca teaches of 0.5 to 2.5 and up to 4% dispersible protein i.e., sodium caseinate, which is a non-fat solid and sucrose 7-20% (see column 1, lines 40-45) which are both non-fat solids and their amount falls in the claimed range 5-23% (Also see Petricca tables I and II). Petricca teaches of including 0.1 to 0.75% by weight of thickeners (i.e., stabilizers), such as, microcrystalline cellulose and carboxymethyl cellulose combination (Column 1, lines 44,

56-59 and Column 3, lines 5-15). Regarding water Petricca discloses 45-60% water (Column 1, lines 42-44) as instantly claimed.

Regarding the limitation of "milk product" as recited in claim 1, Petricca discloses that the whippable product may comprise sodium caseinate (see Column 1, lines 50-53 and Tables I and II), which is salt of casein wherein casein is milk protein. Petricca further teaches of sweeteners including lactose i.e., milk sugar (Column 3, lines 17-24). Petricca also teaches of vegetable or animal sources of fat in the composition (Column 3, lines 3-4). Petricca also teaches of addition of milk to the composition prior to whipping (See Column 4, lines 61-63) i.e., whippable product as disclosed by Petricca comprises milk components and milk, i.e., Petricca teaches of a milk product.

i) Regarding the limitation of "providing at room temperature, either by shaking or with a foaming device, a foamed composition" and "the milk product is not cooled below room temperature to provide the foamed composition", as recited in amended claim 1, Petricca discloses a stable emulsion and discloses that "such emulsion being substantially stable against separation and/or gelation for at least about 1 year at room temperature under aseptic conditions and whippable in the temperature range of 40º to 100º F. to at least about 200% overrun" (Column 1, lines 52-56), which includes the stability limitations as claimed. Petricca further teaches that the product can be whipped at 70º F (See Column 6, lines 38-50, especially lines 44 and 50), which includes the temperature limitation as claimed.

ii) Regarding the limitation of "a foamed composition for beverages" limitation is an intended use of the composition and the intended use does not determine the patentability of the composition. Thus, the limitation is not positively claimed. However, even if the limitation is positively claimed, it would not have defined over the prior art as Petricca teaches of "pourable edible whippable homogenized emulsion comprising water fat sweetener, dispersible protein, thickener, buffer and emulsifier" (Column 1, lines 30-34) "for food topping" (Column 1, lines 14-15). Furthermore, whipped toppings are well known in the beverage industry with beverages such as hot chocolates. In addition, Petricca discloses similar components and it would have been obvious to one of ordinary skill in the art that whippable composition as disclosed by Petricca will function as a beverage foaming milk product as claimed.

iii) Regarding the limitation of high temperature processing as recited in claim 1, it is noted that it is a process limitation and "Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). In the instant case it is noted that high temperature processing of milk products was well known. Petricca teaches of sterilization (Petricca Column 2, lines 55-60 and Column 4, lines 28-31).

iv) Regarding the limitation of emulsifiers, Petricca discloses of utilizing a combination of emulsifiers including propylene glycol monostearate, distearate ethoxylated sorbitan ester and sorbitan monostearate (for example see Petricca Column 1, lines 44-46). Petricca specifically teaches of utilizing other emulsifiers (Column 3, lines 58-66). Thus Petricca's composition also includes combinations of emulsifiers, as claimed.

Regarding specific emulsifiers recited in claim 1, Petricca discloses a whippable composition comprising 0.25 to 2.5% propylene glycol monostearate (Column 2, lines 35-40, TABLE II), which overlaps the recited range 0.3 to 3% propylene glycol monostearate by weight for claim 1 and also the range of 2.4 to 3% propylene glycol monostearate as recited in claim 9.

Petricca also includes other emulsifiers including fatty acid esters of sorbitan (a class of esters which includes sorbitan monostearate, sorbitan tristearate etc), ethoxylated sorbitan esters (a class of emulsifiers known as polysorbates, such as, polysorbate 60 and polysorbate 80) and mono and diglycerides in an attempt to reduce the whipping time for the emulsion (Column 3, lines 61-66).

Regarding the specific emulsifiers recited in claim 1, including the claimed range of 0.005 to 0.15% sorbitan tristearate by weight, Petricca teaches of emulsifiers including fatty acid esters of sorbitan and more specifically sorbitan ester of stearate (a class of esters which includes sorbitan monostearate, sorbitan tristearate etc). Regarding the amount of sorbitan ester, Petricca discloses of sorbitan monostearate in

an amount of 0.05 to 0.25 % by weight (Column 1, lines 49-52 and Column 3, lines 59-60). However, Petricca is silent about the sorbitan ester of stearate being sorbitan tristearate in an amount of 0.005 to 0.15% by weight in the whippable composition as claimed. However, food products, such as creamers, coffee whiteners and whippable toppings etc., which utilize fatty acid esters of sorbitan, including polyoxyethylene sorbitan tristearate (i.e., sorbitan tristearate and by trade names of Polysorbate 65 and Span 65) as part of emulsifying component were known in the art at the time of the invention. Sorbitan tristearate is a non-ionic surfactant (emulsifier) which is dispersible in fat, oil and water and was known in the art of food at the time of the invention as disclosed by Dictionary of Food Ingredients, page 111. Regarding the specific use of sorbitan tristearate, Dictionary of food ingredients discloses that sorbitan tristearate is added to foods, such as, frozen desserts, cakes and coffee whiteners; frequently used with sorbitan monostearate or mono and diglycerides (other emulsifiers), which fulfills the claimed utility. Regarding the specific amount of sorbitan tristearate Dictionary of food ingredients discloses that sorbitan tristearate is utilized typically in amounts 0.1 to 0.4%, which includes appellants' recited amount of 0.005 to 0.15% by weight. Thus, one of ordinary skill in the art had knowledge of the following

- utilizing a combination of emulsifiers comprising sorbitan stearate emulsifying compound disclosed by Petricca (sorbitan monostearate) can be added amounts in appellants' recited range along with propylene glycol monostearate and other emulsifiers (Petricca Column 3), i.e., utilizing combinations of emulsifiers as claimed to achieve a stable whippable composition was known at the time of the

invention (Petricca, Column 1, lines 35-60, column 3, lines 40-66 and Dictionary of Food Ingredients, page 111),

- fatty acid esters of sorbitan such as sorbitan monostearate and mono and diglycerides were known to be added to whippable or whipped milk compositions as emulsifiers in amounts that fall in the recited range of the appellant (Petricca, Column 1, lines 49-52 and Column 3, lines 59-65), in order to achieve optimal emulsification of fat in the whippable composition while reducing the whipping time, and
- sorbitan tristearate is a fatty acid ester of sorbitan, which is a surfactant which is dispersible in fat, oil and water and is added to beverage whiteners in 0.1 to 0.4% frequently in combinations with other emulsifiers (Dictionary of Food ingredients, page 111), and
- compounds sorbitan monostearate (Petricca) and sorbitan tristearate (Dictionary of Food Ingredients) are both fatty acid esters of sorbitan that are safe to use in foods and are both are non-ionic surfactants or emulsifiers having the recommended usage amount in the claimed range of the appellant, i.e., functional substitutes.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that sorbitan monostearate (Petricca) and sorbitan tristearate (Dictionary of Food Ingredients) will function similarly when added to a whippable composition, i.e., would be regarded as functional substitutes or equivalents. Therefore, it would have been matter of routine determination for one of ordinary skill in the art at the time the invention was made to modify Petricca in view of Dictionary of Food Ingredients and substitute art recognized functional equivalent of a fatty acid ester of sorbitan (i.e., sorbitan monostearate) for another (i.e., sorbitan tristearate) in the whippable product as disclosed by Petricca at least based on which ester of sorbitan was more effective as an

emulsifier, more affordable and more easily available at the time the invention was made. The Courts have held that the selection of a known material, which is based upon its suitability for the intended use, is within the ambit of one of ordinary skill in the art. See *In re Leshin*, 125 USPQ 416 (CCPA 1960) (see MPEP § 2144.07).

Regarding monoglycerides as emulsifiers recited in claim 1, including the claimed range of monoglycerides, Petricca discloses that emulsifying composition having fatty acid moiety in polyglycerol ester can be "one or more even numbered C $_{12\text{-}22}$ saturated or unsaturated monocarboxylic acid" (see Column 3, lines30-35) and that "mono and diglycerides may also be utilized in an attempt to reduce whipping time for the emulsion without affecting the stability" (Column 3, lines 63-66). However, Petricca does not specifically teach that the monoglycerides are unsaturated monoglyceride in the amount of 0.005 to 0.15% by weight of the composition, as recited in the independent claims 1. However, Regarding the selection of emulsifiers Staackmann discloses from the group consisting of propylene glycol monostearate (Column 3, lines 48-68), and fatty acid glycerides obtained from various fatty acids including unsaturated fatty acids, such as oleic, palmitoleic, myristooleic etc (See Staackmann Column 3, lines 3-12, 30-35 and 48-68) i.e., unsaturated monoglycerides and combinations thereof in the amount of 0.1% (Column 5, composition A), which includes mono and diglycerides in the claimed amount of 0.005% to 0.15% unsaturated monoglyceride as recited. Thus, one of ordinary skill in the art had knowledge of the following

- monoglycerides of fatty acids, were known to be added to whippable or whipped compositions to reduce the whipping time without affecting the stability (Petricca, Column 3, lines 63-65),
- fatty acids known to be added to whippable or whipped milk compositions as emulsifiers can be saturated or unsaturated fatty acids (Staackmann, Column 3, lines 48-68), in order to achieve optimal emulsification of fat in the whippable milk composition.

Since Petricca and Staackmann both make stable emulsions, as claimed, it would be obvious that the emulsifiers function similarly, i.e., would be regarded as functional substitutes or equivalents. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Petricca in view of Staackmann and substitute one art recognized functional equivalent (i.e., monoglyceride of fatty acid) for another (i.e., monoglyceride of unsaturated fatty acid) in the whippable product as disclosed by Petricca at least based on which emulsifying agents were more easily available and affordable at the time the invention was made. The Courts have held that the selection of a known material, which is based upon its suitability for the intended use, is within the ambit of one of ordinary skill in the art. See *In re Leshin*, 125 USPQ 416 (CCPA 1960) (see MPEP § 2144.07).

Further in response to appellant's argument regarding the amount of monoglyceride (Page 12, Para 2, last 5 lines of brief), as previously discussed in the rejection that Petricca discloses that monoglycerides can be added for reduced whipping time, while maintaining stability of emulsion (Column 3, lines 63-66). Staackmann discloses of combination of mono and diglycerides in the amount of 0.1% by weight (Staackmann

Column 3 and column 5). Further both references also discloses that including emulsifiers in the whippable compositions for their recognized and additive effect was known and also is within the scope of the invention (e.g., See Staackmann Column 3, lines 69-73). Therefore, it would have been a matter of routine determination for one of ordinary skill to modify the combination of references and include mono-glycerides in an amount ranging from 0.005% to 0.15% by weight of the composition, at least for the purpose of achieving the desired result of optimal emulsification, and reduction of whipping time without affecting the stability, as taught by Petricca.

Regarding claim 3, Petricca teaches of stabilizers or thickeners and discloses “It is preferred that the thickener be a major proportion of microcrystalline cellulose and a minor amount of carboxymethyl cellulose” (Column 1, lines 57-59). Regarding the amount of thickener or stabilizer, Petricca discloses 0.1 to 0.75% thickener (Column 1, lines 43-45), which falls in the recited range of the appellant.

Regarding claim 4, Petricca teaches of microcrystalline cellulose and carboxymethyl cellulose combination as thickener (i.e., a stabilizer) (Column 1, lines 57-59). Petricca discloses the use of hydrocolloids in the milk composition, including guar, gum arabic, locust bean, acacia, tragacanth, carrageenan, xanthan, ghatti, agar and karaya (See Column 3, lines 10-15), but the reference is silent about adding alginate or sodium alginate as a stabilizer in the milk composition. However, sodium alginate is well known in the art as a thickening agent/ stabilizer for emulsions and works in a manner that is

similar to the hydrocolloids disclosed by Petricca. For example, Staackmann teaches a milk product comprising sodium alginate (algin) (Column 4, lines 28-34) in the recited range of 0.05% to 0.1%. Thus, addition of alginate in the recited amount in emulsion type milk products was known at the time of the invention for the purpose of stabilizing the emulsion. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute one art recognized functional equivalent (i.e., gums and hydrocolloids of Petricca) for another (i.e., sodium alginate) in the milk product as disclosed by Petricca, depending on which stabilizing agents were more available and affordable at the time the invention was made. The Courts have held that the selection of a known material, which is based upon its suitability for the intended use, is within the ambit of one of ordinary skill in the art. See *In re Leshin*, 125 USPQ 416 (CCPA 1960) (see MPEP § 2144.07).

Regarding claim 9, Petricca teaches a whippable product comprising about 20-30% fat by weight (see Column 1, lines 41-43), which falls in the claimed range of 25% to 40% fat by weight. Petricca discloses a whippable composition comprising 0.25 to 2.5% propylene glycol monostearate (Column 2, lines 35-40, TABLE II), which falls in the recited range of 2.4 to 3% propylene glycol monostearate by weight for claim 9. The limitations of 0.1 to 0.15% by weight of unsaturated monoglyceride and sodium alginate as recited in claim 9 have already been discussed as part of claim 1(see point (iv) above) and claim 4 respectively. Thus, claim 9 is rejected for the same reasons as discussed above and also in claims 1 and 4.

Regarding claim 10, Petricca teaches that the fat is vegetable or animal origin and includes examples of vegetable and animal fats (See Petricca Column 3, lines 1-6), which include the limitation of fats as claimed. Staackmann also teaches that fats can be dairy or non-dairy fats, or a mixture thereof (Column 2, lines 47-65).

Regarding claim 11, Petricca teaches sucrose, which is a carbohydrate (See Column 2, Table I), as claimed. For colors and flavors see examples and details in Column 3-4 of Petricca). Further, Staackmann teaches a milk product of claim 1, further comprising one or more of carbohydrates , i.e., starches (column 4, lines 23-25), mineral salts, colorants, or flavorings (Column 3, lines 1-15 and Columns 5-6 Compositions A-D), as recited.

Regarding claim 15, Petricca teaches of a foam that is stable for at least 10 minutes after foaming using a foaming device where Petricca stores whipped composition at room temperature and at 40ºF for 4-8 hours and discloses that “where the product should not excessive air coalescence when observed through a cross section and should not exhibit any substantial decrease in volume” which includes appellant’s claimed time period for stability. Further, Staackmann teaches a process for producing a foam that is stable for at least 10 minutes which comprises forming a milk product by the method of claim 12 and forming a foam from the milk product by shaking or by using a foaming device (Column 1, line 68 to Column 2, line 24).

Regarding claim 17, Petricca teaches of whippable composition which provides stable foam as discussed earlier regarding claim 15. Regarding the limitation that color of the stable foam be “white”, whippable composition of Petricca may include colors such as carotenes (see e.g., Column 4, lines 5-12) which will affect the color of the whipped product, however, it would have been a matter of routine determination for one of ordinary skill in the art at the time of the invention to utilize no coloring matter to create a white topping or to include white coloring matter to impart white color to the whippable or whipped composition. Changing the color of a food product based on desired appearance of the whipped product does not lend patentable distinction to claims where the composition was known.

Further regarding claim 17, Petricca also does not teach dispensing from an aerosol can, however, Staackmann teaches a spray can (i.e., aerosol container) that contains the milk product of claim 1 and is capable of dispensing the product as a stable foam (Column 1, lines 68-72 and Column 2, lines 7-10). Aerosol cans were known to be used for dispersal of whipped products at the time of the invention. Therefore, it would have been a matter of routine determination for one of ordinary skill in the art at the time of the invention to modify Petricca in view of Staackmann and utilize the foaming device as taught by Staackmann in order to dispense a foamy milk product as instantly claimed. One of ordinary skill would have been motivated to do so at least for the purpose of creating a whippable product that is readily dispersible as an aerated or whipped product for convenience to the consumer.

(2) Claims 12 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Petricca (US 4107343) in view of the combination of Dictionary of Food ingredients (Page 111), Staackmann (US 3,519,440), further in view of Anderson et al (US 4888194), hereinafter Anderson.

Regarding claim 12, Petricca teaches of a method of making a sterilized and homogenized whippable emulsion comprising adding stabilizers, sweeteners, protein and milk components and flavors, emulsifiers and fats as claimed. Regarding the limitation of milk product Petricca teaches that the whippable product may comprise sodium caseinate (see Column 1, lines 50-53 and Tables I and II), i.e., milk protein. Petricca further teaches of nutritive sweeteners including lactose, i.e., milk sugar (Column 3, lines 17-24). Petricca also teaches of vegetable or animal sources of fat in the composition (Column 3, lines 3-4). Petricca also teaches of addition of milk to the composition prior to whipping (See Column 4, lines 61-63) i.e., Petricca discloses of a whippable milk product. Petricca also discloses that it is preferred that the thickener (i.e., a stabilizer) comprises of microcrystalline cellulose and carboxymethyl cellulose (Column 1, lines 57-59), as instantly claimed.

The limitations of specific emulsifiers and composition and properties as recited in claim 12 are the same as recited in claim 1. Thus, composition of claim 12 and its resulting whippability and stability properties are rejected for the same reasons as discussed above regarding claim 1.

Regarding the process of making a whippable milk product of claim 12, Petricca teaches a method of making a whippable emulsion comprising adding stabilizers, sweeteners, protein and milk components and flavors and water etc., to which the emulsifiers are added and then fats are added. Thereafter the mixture is agitated and sterilized and cooled and aseptically homogenized (See Petricca Column 2, lines 45-64). Regarding the limitation of high temperature processing Petricca teaches of sterilization (Petricca Column 2, lines 55-60), as claimed. Thus, Petricca teaches the addition of fats after the addition of emulsifiers as instantly claimed. Regarding the order of steps appellants' are referred to MPEP 2144.04 [R-1] IV where it is stated that selection of any order of performing process steps is prima facie obvious in the absence of new or unexpected results.

Petricca is silent about the limitations of adding the emulsifiers to skim milk and then adding cream as a source of fat to the to the emulsion (lines 4-7 of claim 12 as recited). However, utilizing various dairy products, such as skim milk and cream in making a milk product was known at the time of the invention. Also addition of emulsifiers, additives and dry ingredients to a dairy product and forming an emulsion before adding more dairy product was also known at the time of the invention. For example, Anderson teaches a process of making a shelf stable aseptic dairy product which is capable of forming stable foam upon whipping (See Anderson, Column 2, lines 35-40). Anderson's dairy composition may include dairy cream "in combination with whole or skim milk or milk solids in any proportions such that the desired butterfat content results" (Anderson, Column 3, lines 33-36). Regarding the process of making a whippable dairy product,

Anderson also teaches that emulsifier is added to a portion of the cream (or dairy ingredient, such as skim milk) along with other ingredients and mixed and heated to ensure that the dry blend is completely dissolved. The mixture is then added to the remaining portion of cream and other additives added at this time with thorough mixing. The mixture is cooled and after cooling, the mixture is subjected to UHT processing (See Anderson, Column 6, lines 21-45 and lines 46-68).

Thus, process steps as recited in claim 12, including

- ❑ adding fats after the addition of emulsifiers in a process of making a room temperature stable whippable milk product was known in the art at the time of the invention (Petricca, Column 2, lines 45-65 and column 4, lines 45-50),
- ❑ process of making a whippable dairy product where choosing a combination of dairy ingredients such as, skim milk, milk, milk solids and cream at least based on the availability and to achieve a desired fat content was known at the time of the invention (Anderson), and
- ❑ process for making a whippable dairy product where step of addition of emulsifiers to a part of dairy product to form an emulsion before adding the entire dairy component to the mixture with thorough mixing. The mixture is cooled and after cooling, the mixture is subjected to UHT processing (See Anderson, Column 6, lines 21-45 and lines 46-68), thus the process as claimed was well known in the art at the time of the invention.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Petricca and utilize a dairy ingredient, such as skim milk to mix with emulsifiers and other dry ingredients and blend to form an emulsion before adding the dairy based fat ingredient, such as cream as taught by Anderson in the process of making a stable whippable milk product. One of ordinary skill in the art would have been

motivated to modify Petricca and include one or more milk based ingredients, such as skim milk, milk, milk solids and cream in any proportions, at least for the purpose of achieving a desired fat content in the whippable milk product (Anderson, Column 3, lines 33-36). Further it is noted that new recipes for food involving the addition of common ingredients do not amount to invention merely because the coaction or cooperative relationship between the ingredients which produces new, unexpected, and useful function. In re Levin, 84 USPQ 232.

Regarding claim 16, Petricca teaches of a foam that is stable for at least 10 minutes after foaming using a foaming device where Petricca stores whipped composition at room temperature and at 40ºF for 4-8 hours and discloses that "where the product should not excessive air coalescence when observed through a cross section and should not exhibit any substantial decrease in volume" which includes appellant's recited time for stability. Further, Staackmann teaches a process for producing foam that is stable for at least 10 minutes which comprises forming a milk product by the method of claim 12 and forming foam from the milk product by shaking or by using a foaming device (Column 1, line 68 to Column 2, line 24).

(10) Response to Arguments

For clarity, the section number for response to each argument below is the same as the used by the appellant in the appeal brief.

Appellant's arguments with respect to claims 1, 3-4, 9-12, 15-17 in the appeal brief have been considered but are not persuasive.

Section C

THE REJECTION OF CLAIMS 1, 3-4, 9-11, 15 AND 17 UNDER 35 U.S.C. §103(a)

1) i) Appellant's argue that "The Cited References Fail to Disclose Each and Every Element of the Present Claims" (Page 11 of appeal brief). Appellants seem to arrive at this conclusion based on the following "the cited references, alone or in combination, fail to disclose or suggest a milk product for providing at room temperature, either by shaking or with a foaming device, a foamed composition for beverages, the milk product comprising 0.3 to 3% propylene glycol monostearate by weight, 0.005 to 0.15% sorbitan tristearate by weight, and 0.005 to 0.015% unsaturated monoglyceride by weight as required, in part, by independent Claims 1 and 12." and that neither Staackmann nor Igoe disclose the claimed amount of monglycerides (Appeal Brief, page 12, lines 1-6).

In response appellants are referred to the rejection of claims 1, 3-4, 9-11, 15 and 17 above where it is clearly pointed out that Petricca teaches a "whippable homogenized emulsion comprising water fat sweetener, dispersible protein, thickener, buffer and emulsifier" (Column 1, lines 30-34). Whippable product of Petricca comprises about 20-30% fat by weight (see Column 1, lines 41-43), which falls in the claimed range of 0 to 40% fat by weight. Regarding the limitation of 5% to 23% non-fat solids by weight, Petricca teaches of 0.5 to 2.5 and up to 4% dispersible protein i.e., sodium caseinate,

which is a non-fat solid and sucrose 7-20% (see column 1, lines 40-45) which are both non-fat solids and their amount falls in the claimed range 5-23% (Also see Petricca tables I and II). Petricca teaches of including 0.1 to 0.75% by weight of thickeners (i.e., stabilizers), such as, microcrystalline cellulose and carboxymethyl cellulose combination (Column 1, lines 44, 56-59 and Column 3, lines 5-15). Regarding water Petricca discloses 45-60% water (Column 1, lines 42-44) as instantly claimed. Regarding the overlapping of ranges between the invention and prior art composition it is noted that in the case where the claimed ranges "overlap or lie inside the ranges disclosed by the prior art" a prima facie case of obviousness exists (In re Wetheim, 541 F2d 257, 191 USPQ 90 (CCPA 1976); In re Woodruff, 919 F2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990)).

Further, appellants are reminded that claims are rejected over combination of Petricca with Staackmann and Dictionary of Food Ingredients by Igoe. Regarding the specific argument that “Igoe also fails to remedy the deficiencies of Petricca… At no place in the disclosure does Igoe disclose or suggest the presently claimed amounts of any unsaturated monoglycerides” (Appeal brief page 12, paragraph 3), it is noted that appellant’s is arguing against the references individually, one cannot show non-obviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). In the instant case, the limitation of unsaturated monoglycerides is addressed by Petricca and Staackmann, as discussed above in rejection of claim 1 step iv). Petricca discloses that

emulsifying composition having “mono and diglycerides may also be utilized in an attempt to reduce whipping time for the emulsion without affecting the stability” (Column 3, lines 63-66). However, Petricca does not specifically teach that the monoglycerides are unsaturated monoglyceride in the amount of 0.005 to 0.15% by weight of the composition, as recited in the independent claims 1. However, Regarding the selection of emulsifiers Staackmann discloses from the group consisting of propylene glycol monostearate (Column 3, lines 48-68), and fatty acid glycerides obtained from various fatty acids including unsaturated fatty acids, such as oleic, palmitoleic, myristooleic etc (See Staackmann Column 3, lines 3-12, 30-35 and 48-68) i.e., unsaturated monoglycerides and combinations thereof in the amount of 0.1% (Column 5, composition A), which includes mono and diglycerides in the claimed amount of 0.005% to 0.15% unsaturated monoglycerides as recited. Thus, one of ordinary skill in the art had knowledge of the following

- monoglycerides of fatty acids, were known to be added to whippable or whipped compositions to reduce the whipping time without affecting the stability (Petricca, Column 3, lines 63-65),
- fatty acids known to be added to whippable or whipped milk compositions as emulsifiers can be saturated or unsaturated fatty acids (Staackmann, Column 3, lines 48-68), in order to achieve optimal emulsification of fat in the whippable milk composition.

Since Petricca and Staackmann both make stable emulsions, as claimed, it would be obvious that the emulsifiers function similarly, i.e., would be regarded as functional substitutes or equivalents. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Petricca in view of Staackmann

and substitute one art recognized functional equivalent (i.e., monoglyceride of fatty acid) for another (i.e., monoglyceride of unsaturated fatty acid) in the whippable product as disclosed by Petricca at least based on which emulsifying agents were more easily available and affordable at the time the invention was made. The Courts have held that the selection of a known material, which is based upon its suitability for the intended use, is within the ambit of one of ordinary skill in the art. See *In re Leshin*, 125 USPQ 416 (CCPA 1960) (see MPEP § 2144.07).

In response to appellant's new argument regarding the amount of monoglyceride (Page 12, Para 2, last 5 lines of appeal brief), it is noted that Petricca discloses that monoglycerides can be added for reduced whipping time, while maintaining stability of emulsion (Column 3, lines 63-66). Staackmann discloses of combination of mono and diglycerides in the amount of 0.1% by weight (Column 3 and column 5). Further both references also discloses that including emulsifiers in the whippable compositions for their recognized and additive effect was known and also is within the scope of the invention (e.g., See Staackmann Column 3, lines 69-73). Therefore, it would have been a matter of routine determination for one of ordinary skill to modify the combination of references and include monoglycerides in an amount ranging from 0.005% to 0.15% by weight of the composition, at least for the purpose of achieving the desired result of optimal emulsification, and reduction of whipping time without affecting the stability, as taught by Petricca (column 3).

ii) Appellants' argue that the product as claimed "provides good whitening powder" (Appeal Brief, page 11, last 3 lines). In response to appellant's argument that the references fail to show certain features of appellant's invention, it is noted that the features upon which appellant relies (i.e., good whitening powder) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

2) Appellant's other argument is that "skilled artisan would have no reason to combine the cited references because the references teach away from each other and are directed toward products having completely different objectives".

i) Appellant's conclusion is based on the assertion that "*Petricca* teaches a non-dairy (non-milk) emulsion." (Appeal Brief, page 13, lines 2-3), "which not only teaches away from *Staackmann,* but also teaches away from the present claims, which are directed to milk products" (Appeal Brief, page 14, lines 5-7). This argument is not persuasive because Petricca teaches that the whippable product comprising sodium caseinate (see Column 1, lines 50-53 and Tables I and II), which is salt of casein, i.e., milk protein. Petricca further teaches that although preferred sweetener is sucrose, other nutritive sweeteners including lactose (i.e., milk sugar) can be used (Column 3, lines 17-24). Petricca also teaches of vegetable or animal sources of fat in the composition (Column 3, lines 3-4). Petricca also teaches of addition of milk to the

composition prior to whipping (See Column 4, lines 61-63) i.e., Petricca discloses of a whippable milk product, as discussed in rejection of claim 1.

ii) Appellant's other argument against Petricca's addition of milk before whipping that "However, the emulsion itself does not include any milk" (Appeal brief, page 13, para 2, last 3 lines) is also not persuasive. In response, appellant is referred to claim 1 as recited, wherein the claimed invention does not require any "milk" or specific milk product or any milk component in the composition. The claim is directed to whippable composition and does not exclude addition of an ingredient or component, such as, milk before whipping as taught by Petricca. Further appellant's disclosure does not define the term "milk product" to include or exclude any specific components or products. Thus, Petricca's inclusion of casein or milk protein (see Column 1, lines 50-53 and Tables I and II), lactose or milk sugar (Column 3, lines 17-24) and Petricca's teaching of addition of milk before whipping, fulfills the limitation of whippable product being "milk product" as claimed and does not teach against Staackmann or the claimed composition, as argued by the appellant.

iii) Appellant's other argument is that Petricca and Staackmann can not be combined based on the conclusion that "directed towards products having completely unrelated objectives …the skilled artisan would have no reason to combine the cited references to arrive at the present claims" (Appeal brief, page 14, lines 8-11). This argument is also not persuasive and in response to appellant's argument that Petricca and Staackmann are is nonanalogous art, it has been held that a prior art reference

must either be in the field of appellant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the appellant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, Petricca teaches a whippable milk product, as discussed above in response to arguments Section C 2) parts i) and ii). The product of Petricca is "whippable homogenized emulsion comprising water fat sweetener, dispersible protein, thickener, buffer and emulsifier" (Column 1, lines 30-34). However, Petricca does not specifically teach that the monoglycerides are unsaturated monoglyceride in the amount of 0.005 to 0.15% by weight of the composition, as recited in the independent claim 1. Staackmann teaches of whippable topping, i.e., a foamable composition which falls in the same field of endeavor as Petricca and therefore Petricca and Staackmann both are directed towards similar objective of making a whippable or foamable food product as instantly claimed. Regarding the reason to combine Staackmannn and Petricca, appellant is further referred to response of Argument 1) above.

Thus, the two references Petricca and Staackmann both teach stable emulsions, which can be whipped, wherein the composition comprises monoglycerides and are directed towards foamable or whippable products and do not teach against each other, as alleged by the appellant.

iv) Appellant's other argument against examiner's position of emulsifiers sorbitan monostearate and sorbitan tristearate being functional equivalents (Petricca in view of

Igoe). Appellant argues that the two emulsifiers are not functional equivalents and appellant's base this argument on the differences in dispersibility of the two emulsifiers as discussed in Igoe (Appeal Brief, page 14, last paragraph). Appellant's argument is not persuasive because Igoe clearly states that sorbitan tristearate also known as Polysorbate 65 and Span 65 is a non-ionic surfactant (emulsifier) which is dispersible in fat, oil and water and was known in the art of food at the time of the invention as disclosed by Dictionary of Food Ingredients, page 111. Sorbitan monostearate is also water dispersible. Regarding the specific use and amount of sorbitan tristearate, Igoe teaches that sorbitan tristearate is added to foods, such as, frozen desserts, cakes and coffee whiteners; frequently used with sorbitan monostearate or mono and diglycerides (other emulsifiers) typically in amounts 0.1 to 0.4%, which includes appellants' recited amount of 0.005 to 0.15% by weight.

Further regarding appellant's argument about the differences in dispersibility of sorbitan stearate emulsifiers, it is noted that both sorbitan monostearate and sorbitan tristearate are both water dispersible and are frequently used together or with other emulsifiers (Igoe page 111). Moreover the invention as claimed comprises more than one emulsifier and also comprises **fat in 0-40% by weight of the composition**, it would have been obvious that water dispersibility of an emulsifier is one of the desired features for the composition as the composition as claimed includes fat as an optional ingredient.

It is further noted that compounds sorbitan monostearate (Petricca) and sorbitan tristearate (Dictionary of Food Ingredients) are both fatty acid esters of sorbitan that are

safe to use in foods and are both compounds have the following characteristics in common:

both are sorbitan esters of stearic acid,

both are water dispersible (Igoe and appellant's remarks page 7, lines 10-20),

both are non-ionic surfactants and emulsifiers (Igoe),

both are capable of being used in whipped or whippable food compositions (Petricca and Igoe),

recommended usage amount for both overlaps the claimed range of the appellant (Petricca and Igoe).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that sorbitan monostearate (Petricca) and sorbitan tristearate (Dictionary of Food Ingredients) will act as emulsifiers, i.e., function similarly when added to a whippable composition, i.e., would be regarded as functional substitutes or equivalents. Therefore, it would have been matter of routine determination for one of ordinary skill in the art at the time the invention was made to modify Petricca in view of Dictionary of Food Ingredients and substitute art recognized functional equivalent of a fatty acid ester of sorbitan (i.e., sorbitan monostearate) for another (i.e., sorbitan tristearate) in the whippable product as disclosed by Petricca at least based on the fat content of the emulsion and also based on availability, affordability and effectiveness of sorbitan ester as an emulsifier, at the time the invention was made. The Courts have held that the selection of a known material, which is based upon its suitability for the

intended use, is within the ambit of one of ordinary skill in the art. See *In re Leshin*, 125 USPQ 416 (CCPA 1960) (see MPEP § 2144.07).

v) Appellants argue that Examiner has applied "hindsight reasoning by attempting to selectively piece together teachings of each of the references in an attempt to recreate what the claimed invention discloses". (Appeal Brief, page15, lines 1-5). This argument is also not persuasive. In response to appellant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the appellant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). Appellant's argument is not convincing as obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In the instant case the whippable compositions of Petricca discloses of utilizing a combination of emulsifiers including propylene glycol monostearate, distearate ethoxylated sorbitan ester and sorbitan monostearate (for example see Petricca Column 1, lines 44-46).

Petricca specifically teaches of utilizing other emulsifiers (Column 3, lines 58-66). Thus Petricca's composition also includes combinations of emulsifiers, as claimed.

Regarding specific emulsifiers recited in claim 1, Petricca discloses a whippable composition comprising 0.25 to 2.5% propylene glycol monostearate (Column 2, lines 35-40, TABLE II), which overlaps the recited range 0.3 to 3% propylene glycol monostearate by weight for claim 1 and also the range of 2.4 to 3% propylene glycol monostearate as recited in claim 9.

Petricca also includes other emulsifiers including fatty acid esters of sorbitan (a class of esters which includes sorbitan monostearate, sorbitan tristearate etc), ethoxylated sorbitan esters (a class of emulsifiers known as polysorbates, such as, polysorbate 60 and polysorbate 80) and mono and diglycerides in an attempt to reduce the whipping time for the emulsion (Column 3, lines 61-66). Thus, monoglycerides and sorbitan esters were also known to be added as emulsifiers, as taught by Petricca. Petricca is silent about specific monoglyceride and specific sorbitan ester as claimed and Staackmann and Igoe are relied to show the conventionality of those emulsifiers in the respective amounts in a whippable composition. As the references of record were published before the time the invention was made, the references of record would be knowledge generally available to one of ordinary skill in the art at the time the invention was made and thus the knowledge contained therein would be available to one of ordinary skill in the art. Furthermore, the fact that all the references used in the rejection have publication dates before the filing date of appellant's application indicates that the emulsifier combination as claimed was known in the art and to modify the primary

reference to include emulsifier combinations taught in secondary references to obtain the benefits taught would have been readily apparent to one skilled in the art. The rejection is not based on hindsight if the knowledge is obtained from the teaching of the prior art. Appellant has not presented any concrete reasoning or evidence to show why one skilled in the art would not have made the modification as set forth in the rejection (Appeal brief, page 15, paragraph 2).

Section D

THE REJECTION OF CLAIMS 12 AND 16 UNDER 35 U.S.C. §103(a)

1) i) Appellant's argue that "The Cited References Fail to Disclose Each and Every Element of the Present Claims" (Page 16 of appeal brief). Appellants seem to arrive at this conclusion based on the following "the cited references, alone or in combination, fail to disclose or suggest a milk product for providing at room temperature, either by shaking or with a foaming device, a foamed composition for beverages, the milk product comprising 0.3 to 3% propylene glycol monostearate by weight, 0.005 to 0.15% sorbitan tristearate by weight, and 0.005 to 0.015% unsaturated monoglyceride by weight as required, in part, by independent Claims 1 and 12." and that Neither Staackmann nor Igoe disclose the claimed amount of monglycerides and Anderson's dairy product also does not remedy the monoglyceride (Appeal Brief, page 17, Para 1-3). This argument is similar to Argument 1) parts i) and ii) of section C, and has been addressed above.

ii) Appellants' argue that the product as claimed "provides good whitening powder" (Appeal Brief, page 17, para 1, last 3 lines). In response to appellant's argument that the references fail to show certain features of appellant's invention, it is noted that the features upon which appellant relies (i.e., good whitening powder) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

2) i) Appellant's other argument is that "skilled artisan would have no reason to combine the cited references because the references teach away from each other and are directed toward products having completely different objectives" (Appeal Brief, page 18). Appellant's conclusion is based on the assertion that "*Petricca* teaches a non-dairy (non-milk) emulsion." (Appeal Brief, page 18, Para 2), "which not only teaches away from *Staackmann,* but also teaches away from the present claims, which are directed to milk products" (Appeal Brief, page 18, Para 2). These arguments are similar to Argument 2) parts i) addressed in section C of response to arguments above.

Further, appellant is referred to claim 1 as recited, wherein the claimed invention does not require any specific milk product or any milk component in the composition. The claim is directed to whippable composition and utilizes transitional phrase "comprising" in line 2, i.e., the claim is open ended and does not exclude addition of an ingredient or component, such as, milk before whipping as taught by Petricca. Further appellant's disclosure does not define the term "milk product" to include or exclude any

specific components or products. Thus, Petricca's inclusion of casein or milk protein (see Column 1, lines 50-53 and Tables I and II), lactose or milk sugar (Column 3, lines 17-24) and Petricca's teaching of addition of milk before whipping, fulfills the limitation of whippable product being "milk product" as claimed and does not teach against Staackmann or the claimed composition, as argued by the appellant.

Furthermore, in the instant case Anderson discloses of addition of milk and cream and process steps for claim 12, including

- adding fats after the addition of emulsifiers in a process of making a room temperature stable whippable milk product was known in the art at the time of the invention (Petricca, Column 2, lines 45-65 and column 4, lines 45-50),
- process of making a whippable dairy product where choosing a combination of dairy ingredients such as, skim milk, milk, milk solids and cream at least based on the availability and to achieve a desired fat content was known at the time of the invention (Anderson), and
- process for making a whippable dairy product where step of addition of emulsifiers to a part of dairy product to form an emulsion before adding the entire dairy component to the mixture with thorough mixing. The mixture is cooled and after cooling, the mixture is subjected to UHT processing (See Anderson, Column 6, lines 21-45 and lines 46-68), thus the process as claimed was well known in the art at the time of the invention.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Petricca and utilize a dairy ingredient, such as skim milk to mix with emulsifiers and other dry ingredients and blend to form an emulsion before adding the dairy based fat ingredient, such as cream as taught by Anderson in the process of making a stable whippable milk product. One of ordinary skill in the art would have been

motivated to modify Petricca and include one or more milk based ingredients, such as skim milk, milk, milk solids and cream in any proportions, at least for the purpose of achieving a desired fat content in the whippable milk product (Anderson, Column 3, lines 33-36). Further it is noted that new recipes for food involving the addition of common ingredients do not amount to invention merely because the coaction or cooperative relationship between the ingredients which produces new, unexpected, and useful function. In re Levin, 84 USPQ 232.

Therefore, appellant's arguments regarding rejection of claims 1, 3-4, 9-11, 15-17 over Petricca in view of Igoe and Staackmann and claims 12 and 16 over Petricca in view of Igoe and Staackmann further in view of Anderson have not been found persuasive. For the above reasons, it is believed that the rejections of claims 1, 3-4, 9-12, 15-17 should be sustained.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

Respectfully submitted,

/Jyoti Chawla/

Conferees:

/Keith D. Hendricks/
Supervisory Patent Examiner, Art Unit 1781

/Christine Tierney/
Supervisory Patent Examiner, Art Unit 1700